

What is claimed is:

1. An InterWorking Unit (IWU) for interfacing a plurality of client devices to a MultiProtocol Label Switching (MPLS) network, the IWU comprising:

- 5 a plurality of IWU edge nodes adapted for exchanging MPLS frames with the plurality of client devices;
- an IWU switch node communicating with the plurality of IWU edge nodes and adapted for exchanging the MPLS frames with the MPLS network, with the IWU switch node being configured to receive a MPLS frame from the MPLS network, with the MPLS frame including an inner label and an outer MPLS label, process the outer MPLS label in
- 10 order to determine one designated IWU edge node of the plurality of IWU edge nodes, with the one designated IWU edge node being designated by the outer MPLS label, and transfer the MPLS frame to the one designated IWU edge node; and
- the one designated IWU edge node being configured to transfer the data transported in the MPLS frame to a designated client device that is designated by the
- 15 inner label of the MPLS frame.

2. The IWU of claim 1, wherein the outer MPLS label specifies a unique IWU edge node of the plurality of IWU edge nodes.

20 3. The IWU of claim 1, with the IWU interpreting the inner label based on the outer MPLS label.

4. The IWU of claim 1, with the IWU switch node being further configured to strip off the outer MPLS label from the MPLS frame before the IWU switch node transfers the MPLS frame to the designated IWU edge node.

5 5. The IWU of claim 1, with the IWU switch node being further configured to receive a second MPLS frame from the MPLS network, with the second MPLS frame including an improper inner label and a proper outer MPLS label, and transfer the second MPLS frame to a second designated edge node that is designated by the proper outer MPLS label; and

10 with the second designated IWU edge node being configured to not transfer the data transported in the second MPLS frame to a designated client device that is improperly designated by the improper inner label of the second MPLS frame.

15 6. The IWU of claim 5, wherein the second designated IWU edge node discards the data transported in the second MPLS frame.

7. The IWU of claim 5, wherein the second designated IWU edge node generates an alarm condition.

8. A method of operating an InterWorking Unit (IWU) for interfacing a plurality of client devices to a MultiProtocol Label Switching (MPLS) network, the method comprising:

an IWU switch node of the IWU receiving a MPLS frame from the MPLS
5 network, with the MPLS frame including an inner label and an outer MPLS label;
the IWU switch node processing the outer MPLS label in order to determine one designated IWU edge node of a plurality of IWU edge nodes, with the one designated IWU edge node being designated by the outer MPLS label;
the IWU switch node transferring the MPLS frame to the one designated IWU
10 edge node; and
the one designated IWU edge node transferring the data transported in the MPLS frame to a designated client device that is designated by the inner label of the MPLS frame.

15 9. The method of claim 8, wherein the outer MPLS label specifies a unique IWU edge node of the plurality of IWU edge nodes.

10. The method of claim 8, with the IWU interpreting the inner label based on the outer MPLS label.

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11. The method of claim 8, with the IWU switch node being further configured to strip off the outer MPLS label from the MPLS frame before the IWU switch node transfers the data transported in the MPLS frame to the designated IWU edge node.

12. The method of claim 8, with the method further comprising:

receiving a second MPLS frame from the MPLS network in the IWU switch node,
with the second MPLS frame including an improper inner label and a proper outer MPLS
5 label;

the IWU switch node transferring the second MPLS frame to a second designated
IWU edge node that is designated by the proper outer MPLS label; and

the second designated IWU edge node not transferring the data transported in the
second MPLS frame to a designated client device that is improperly designated by the
10 improper inner label of the second MPLS frame.

13. The method of claim 12, wherein the second designated IWU edge node
discards the second MPLS frame.

15 14. The method of claim 12, wherein the second designated IWU edge node
generates an alarm condition.

15. A software product for an InterWorking Unit (IWU) for interfacing a plurality of client devices to a MultiProtocol Label Switching (MPLS) network, with the IWU comprising an IWU switch node adapted for exchanging MPLS frames with the MPLS network and a plurality of IWU edge nodes in communication with the IWU switch node and adapted for exchanging the MPLS frames with the plurality of client devices, the software product comprising:

a control software configured to direct the IWU switch node to receive a MPLS frame from the MPLS network, with the MPLS frame including an inner label and an outer MPLS label, to direct the IWU switch node to process the outer MPLS label in order to determine one designated IWU edge node of the plurality of IWU edge nodes, with the one designated IWU edge node being designated by the outer MPLS label, to direct the IWU switch node to transfer the MPLS frame to the one designated IWU edge node, and to direct the one designated IWU edge node to transfer the data transported in the MPLS frame to a designated client device that is designated by the inner label of the MPLS frame; and

a storage system that stores the control software.

16. The software product of claim 15, wherein the outer MPLS label specifies a unique IWU edge node of the plurality of IWU edge nodes.

17. The software product of claim 15, with the IWU interpreting the inner label based on the outer MPLS label.

18. The software product of claim 15, with the control software being further configured to direct the IWU switch node to strip off the outer MPLS label from the MPLS frame before the IWU switch node transfers the MPLS frame to the designated IWU edge node.

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19. The software product of claim 15, with the control software being further configured to direct the IWU switch node to receive a second MPLS frame from the MPLS network, with the second MPLS frame including an improper inner label and a proper outer MPLS label, and to transfer the second MPLS frame to a second designated
10 IWU edge node that is designated by the proper outer MPLS label, and to direct the second designated IWU edge node to not transfer the data transported in the second MPLS frame to a designated client device that is improperly designated by the improper inner label of the second MPLS frame.

15 20. The software product of claim 19, wherein the second designated IWU edge node discards the second MPLS frame.

21. The software product of claim 19, wherein the second designated IWU edge node generates an alarm condition.